DOCUMENT RESUME

ED 377 144 SP 035 517

AUTHOR Swartz, James D.
TITLE Practical Theories of Teaching, Media, and Classroom Management.
PUB DATE 6 Apr 94
NOTE 18p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 4-8, 1994).
PUB TYPE Speeches/Conference Papers (150) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Classroom Techniques; Cultural Pluralism; *Educational Media; Elementary Secondary Education; Ethnocentrism; Higher Education; *Instruction; *Learning Theories; Social Influences; Teacher Background; Teaching Experience; *Theory Practice Relationship
IDENTIFIERS *Rorty (Richard)

ABSTRACT

This paper examines teachers' practical theories of teaching and ways in which individual teachers participate in a social solidarity, based on Richard Rorty's idea of solidarity as clinging to one's own ethnocentrism to understand differences between right and wrong, good and bad. Social solidarity is seen as holding people together, defining them as a group, and honoring one's own ethnocentrism as a starting place for social criticism and the establishment of pluralism. Practical theories of teaching are theories constructed from confronting the practical problems of the act of teaching and from the solidarity of practitioners. Practical theories of teaching call upon a teacher's solidarity to solve practical problems. When teachers select media that "work" in classroom instruction, they are, in effect, making a connection between the solidarity of students, their own solidarity, and their customized practical theories of teaching. By choosing media consistent with these three factors, effective classroom management may follow. Therefore, media and classroom management are examples of the interaction between a teacher's solidarity and practical theories of teaching. (Contains 19 references.) (JDD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 377 144

Practical Theories of Teaching, Media, and Classroom Management

by

James D. Swartz
Assistant Professor
University of Arkansas
College of Education
346 Graduate Education Building
Fayetteville, Arkansas 72701
(501) 575-5115
jswartz@comp.uark.edu

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

G. D. Swartz

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Presented at the Annual Meeting of the American Educational Research Association, New Orleans, Louisiana, April 4-8, 1994.

SP035517

BEST COPY AVAILABLE

Abstract- The aim of this study has been the reconstruction of a school curriculum in reflective teaching situations within a cooperative culture. Two working assumptions were considered: (a) teacher development was based on the teacher thinking research approach, and (b) school organization followed a cooperative culture paradigm. The research *process* features were the following: (a) the university team was composed of external advisers; (b) school curriculum and classroom instruction were reviewed by novice and expert school teachers; (c) case studies were the research method used for analyzing teaching situations; (e) ethnographic techniques were used to collect phenomena; (f) data analysis was done by means of a computer program; (g) teachers' reflective cycle was used to reconstruct practice, and (h) teachers' professional portfolios contained narrative teaching vignettes, cognitive maps, teaching principles. *Results* showed the following findings: (a´) a lasting school-university collaborative research and training process; (b´) notorious teachers´ beliefs and concepts changes; (c´) movilization of dynamic teachers´ talents and values to work together: teacher dyads to reflect on their own continually developing teaching; researchers' writing narrative teaching vignettes; collegial coaching, and curriculum materials designed and developed by teachers. Two main *hypotheses* were verified: (i) teachers' forms of pedagogical practical knowledge showed fluid and diverse implicit action theories in terms of order, size, interactive and topological space position, and (ii) teachers' "grounded theories" carefully induced from diverse data fitted the substantive reality of the cooperative and reflective teaching school culture.

Background and Rationale

Reflective teaching is a concept used to describe a variety of educational ideas, beliefs and classroom practices. Some phrases used in the literature seem to have approximately the same meaning and are used interchangeably: critical thinking, problem-solving strategy and inquiry-oriented or action research, for example. In this study we describe some characteristics of reflective practical teaching; interpret the value of intellectualizing teaching by teachers; specify questions put half answered by teachers; summarize a successful teaching/learning research process in the context of an urban large size school. Reflective teaching also refers to a process of critical-dialectical understandings of teaching as a profession whereby teachers develop relationships, reflective thinking and contextualized judgment, and openmindedness expectations that are necessary conditions for being analytical. In a larger framework, reflective teaching may be thought of as an intellectual construct that focuses on the understanding and resolution of doubtful, uncertain, or dilemmatic issues as stimuli to professional development. However, being a reflective teacher involves more than an active cognitive process of technical or phenomenological analysis. Also, it includes affective and value judgment activities. Moreover, it denotes a non-rational processes that might guide teachers´ professional actions (Korthagen, 1993). A teacher is prompted to engage in reflective teaching when trying to evaluate the underpinnings of teaching/learning classroom processes and perplex actions in order to lead to new understandings and appreciations of phenomena, in other words, when framing up the challenges of a situation.

The Nature of Reflective Teaching

One of the most important writings on reflective teaching is the work of Dewey (1933). According to him, reflection or inquiry means the "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and further conclusions to which it tends" (p. 9). Thus reflection moves from a stage of hesitation, doubt and perplexity to a goal of mastery of the problematic situation (i.e. dealing with student psychological differences, ethic issues, classroom management tasks, student motivation) or satisfaction to find alternative materials that will give impetus to resolve any challenge and be responsible of the consequences (Copeland, 1993). Studies conducted by Schön (1987) have also shown that teachers are committed to the theories on which teaching action is based. Acknowledging the complex characteristics of educational settings is the process that he calls reflection in action. Reflective teaching requires critical thinking in order to develop contextual school and classroom theories of student fulfillment and satisfaction.

Reflection could also be defined as "a way of thinking about educational matters that involves the ability to make rational choices and to assume responsibility for those choices" (Ross, 1989, p. 22). Reflective teaching entails knowledge of teachers´ cognitions and metacognitive

competencies, such as self-awareness, evaluative judgments and improvisational thinking. Reflective teaching implies solutions grounded in the teachers´ personal tentative knowledge. Craft knowledge rests in the tested evidence and awareness of the classroom context. Reflective teachers seek explicit educational arguments, use valid educational practice sources, look for solutions that puzzle them and consider and weigh other teachers' points of view (i.e. how knowledge is organized during curriculum planning or interactive teaching; subjective beliefs about school organization and classroom climate; self-reflections about their own teaching performance, and middle-range theories that refute or corroborate their initial theoretical and educational propositions). Another focus of cognitive research is how the knowledge base is organized into a network of related phenomena (i.e. instructional facts, classroom tasks, curricular concepts, content principles, student activities and world experiences). These structures called schemata constitute the teacher's genuine understanding of the world and are used to give meaning to the professional context.

In spite of the range of methodological approaches employed in reflective teaching evaluation (Kagan, 1990), the general tendency recently has been towards qualitative, ethnographic, or interpretative studies. This is in part because the complexities of reflectivity as a teaching concept (i.e. clarifying and sequencing complex subject-matter knowledge, dealing with political and ethical principles underlying teaching, and treating educational institutions as problematic issues) do not readily generate plausible and discrete educational hypotheses to test in practical situations. Another controversial aspect of reflective teaching (for instance, teachers´ cognitions) is that they generally cannot be evaluated by a fixed set of evaluative procedures or artefacts. Critical reflective teaching evaluation aims at expanding teachers´ thoughts of educational characteristics and situations, that is, responses in interviews, observation vignettes (i.e. short personal stories written by an observer of the everyday understandings of classroom interactive teaching), notes in journals, casual conversations with colleagues, and promoting students´ opportunities for success in school and moral action. One of the first procedures to access reflective teaching is by observation of teachers at classroom work: gathering data on communicative situations, followed by the description of the teachers' practical reasoning through extended interviews, that is, an effort to portray instructional events (i.e. use of cues, feedback, and correctives) in context, followed by the interpretation when teachers ascribe meanings and values to specific things, such as student developmental level, and parent educational roles in the school.

School culture as the collection of values and teaching activities

In the present study *school culture* is understood as having the following critical attributes: teacher commitment to curriculum development research (Rowan, 1990); peer consensus of finding spare time to do in-service training activities (i.e. interviewing colleagues, writing self-reflections, attending discussion seminars, reading others´ practical protocols); instructional and pedagogical work emphasis; consensus of University-school collaboration goals, and teachers as co-researchers credentials. The building size of the school, keeping high standards of middle-class student morale, teachers´ concerns with preparing pupils to be productive citizens, verification of the administrative school organization and teachers´ academic expectations were other sociological, social psychological, and psychological characteristics inherent in the school climate. Other topics considered under the anthropological point of view of this study were the school extra-curriculum traditions and the symbolic representations of Catholic rituals. Moreover, school culture was also described as the collection of religious values and parents´ activities worked in partnership with educators (Lieberman, Darling-Hammond and Zuckerman, 1991; Lee, Bryk and Smith, 1993).

Purpose

Two main aims characterized this study: first of all, to detect tendencies of *implicit and discoursive knowledge* of teachers (Alexander, Schallert and Hare, 1991; Clandinin and Connelly, 1992), and secondly, to analyze and interpret classroom teaching following the "grounded theory" approach (Strauss and Corbin, 1990).

Research Hypothesis and its Justification

A working hypothesis was declared: *teachers' personal construction of teaching in a collaborative and reflective school culture is an educational innovation that fosters teachers' professional processes and improves the social organization of the school* (Villar, 1992). Cognitive interactions on curriculum practice constitute a principle of professional teacher development (Day, 1990). At the same time, it favours a collaborative and commitment culture in the realization of activities in order to improve practice. Peer interactions represent the origin of a formative strategy as it is coaching (Joyce and Showers, 1982; Joyce, 1990), bucause they give opportunities of narrative interchanges that represent teaching personal models and feedback on action. Consequently, we declared two minor hypotheses:

H1: Teachers' forms of practical pedagogical knowledge show a diversity of teaching action designs through them.

H2: Teachers' "grounded theories" show reflective teaching as related to a collaborative social relations school culture.

Method

Subjects and setting

The initial sample was composed of 46 teachers and two members of the principalship (see Table 1). The majority of the staff members were female teachers (N = 44). The predominant age group cycles of the sample were among 28 and 33 year-old teachers, and 40 and 50/55 year-old teachers. The final sample of selected teachers was 29 representing different courses, grade levels and subject matters of the school.

Table 1

GRADE LEVEL	CLASSROOMS	STUDENTS
Preschool	6	227
Primary Education	24	990
Secondary Education	12	527
Pre-University Course	4	149

Data Collection

Data from practice included actions in the way of curricular segments, colleague communication transactions, pupil interactions, interview transcriptions, intentions and beliefs, etc. The processes of data collection and analysis by teachers were simultaneous in time (Miles and Huberman, 1984; Guba and Lincoln, 1987). Data evidences were compiled mainly in the 1990-91 year course. The research process was divided into three main phases:

(a) an in-service curriculum training workshop was given to teachers by the University external advisors and researchers. At that time, teachers filled self-reflections on the following topics: core elements ot curriculum development; teachers as researchers; classroom media and teaching resources, and curriculum evaluation. Moreover, teachers completed 72 cooperative dialogues by peers on those themes, which were audio tape recorded and later transcribed;

(b) a reduction of the number of teachers participating in the study (N = 29 teachers). Teachers were selected according to the following criteria: (a') quality and quantity of empirical-descriptive evidences produced to that research period, and (b') representativeness of teachers according to

educational levels and subject matters. Teachers were divided into nine subgroups, so that each researcher assumed the responsability of monitoring each subgroup belonging either to the same subgroup or subject matter. Each teacher was observed by a research member once a week and she received a weekly transcription of the vignette observation. As soon as teachers had the narrative vignettes, deep semi-structured interviews were done with them reflecting about their own teaching practice, and making corrections of written empirical assertions. Moreover, teachers or advisors asked questions about teachers´ practical quoted teaching. Finally, (c) the collection, examination, negotiation and proposal of analysis categories generated by teachers, and the elaboration and documentation of multimensional evidences, such as teaching explicative principles, cognitive maps, confrontation dialogues and reconstruction teaching proposals.

The instruments for substantiating and capturing the language of the practice were the following: (a) *curriculum documents*. Information was elicited by different bureaucratic documents: time schedules, school planning, annual reports, educational projects; (b) *written reflections*. Teacher reflections were comprised in a personal dossier or portfolio for each individual teacher. At least 198 written reflections were generated of about an extension of 250 words each; (c) *cooperative dialogues*. Dialogues were dyadic or peer interviews lasting about half an hour each, and were audio tape recorded; (d) classroom *observations* occurred once a week. Observers wrote narrative vignettes reflecting the teacher-students interactions and classroom activities. The empirical asserts induced from observations were revised and modified by each individual teacher; (e) teacher *interviews* were done with advisors and colleagues, audio tape recorded, transcribed and later introduced into a word process computer program. Teachers´ interviews questioned and responded issues and dilemmas of classroom teaching texts, so that they highlighted tacit aspects of teaching situations and curricular materials, generating hypotheses as alternative procedure solutions and other ostensibly teaching tactics and instructional strategies. During the interview phase teaching meanings and patterns were negotiated and interpreted among teachers and researchers -a hermeneutic approach to interpretation-.

Procedure

According to Smyth (1989), teachers were engaged in four forms of reflective action in order to change beliefs, concepts and working conditions that constrained them. They were the following:

(a) *describing*. In this stage teachers answered the question: "what do I do?". As teachers reflected about their teaching action and voices they described their knowledge, beliefs and principles that characterized their practical action. Teaching was viewed as a written text comprising teachers´ common educational language: self-reflections and quotes from interviews comprised events, accounts and dilemmas that made up teachers´ tacit knowledge in the discourse of schooling;

(b) *informing*. This stage was initiated by the following guiding question: "what does this mean?". Teachers uncovered their short-range, explanatory or local teaching theories that informed their teaching action. As teachers described, analyzed, and made inferences about classroom events, they were creating their own pedagogical principles. These subjective theories helped them make sense of what was going on in the school and society and guided further action;

(c) *confronting*. This stage responded the question: "how did I come to be like this?". Teachers sought out the construction of their assumptions, ideas, values and beliefs, and how social and institutional forces had influenced them. They saw knowledge as constructed symbolically by the mind through social interaction with others. Undistorted communication took place between teacher pairs because they confronted each other as equals, and

(d) *reconstructing*. At this stage teachers answered the question: "how might I do things differently?". The intention of this form of action for teachers was to criticize and uncover the tensions that existed between particular teaching practices and the larger cultural and social school context in which they were embedded (Elliott, 1990). The characteristic of this social

reconstructionist conception was its commitment to reflection as a communal activity where teachers could support and foster each others´ knowledge (Zeichner and Tabachnick, 1991). This feasible "hermeneutic circle" of interpretation, validation and revision or reconstruction characterized the process approach for each individual teacher.

Analysis

The constant comparative method was followed combining the codification of categories induced from the language with a simultaneous process of comparison of all the images and metaphors used in their representations. In this sense, synthesis was obtained in three phases:

(a) data *reduction* was a process of selection, focalization, simplification, abstraction and transformation of data. During this time a tentative reflection was conducted on all collected and recurrent instances of human events (i.e. text expressions or actions). The objective of this phase was to suggest possible lines and conections among occurrences. Teachers followed those activities: (a´) looking for categories examining fieldwork data. Each teacher read all events in order to identify intuitive themes, ideas, anecdotes, patterns, etc. which were annotated on the text, and (b´) a tentative list of analytic categories (thematic codes). Each teacher elaborated her provisional frame of topics that constituted her tipology or schemata;

(b) data ordering consisting in the organization of all amounts of evidence to warrant some assertions. Teachers divided written texts into meaning units. The selected registered unit was the phrase or paragraph holding key meaningful events respecting certain typical topics connected with classroom teaching practice. Interpretation codes emerged when teachers extracted series of inferences from data (inductive generation of codes), and

(c) determination of links and relationships among instances and sentences which were tested deductively on the ground. In this phase teachers played a role of crucial researcher. In order to test research hypotheses 1 and 2, the AQUAD (*A*uswertung *qua*litativer *D*aten) computer qualitative data analysis program was followed (Huber, 1991; Tesch, 1990). In particular, research hypothesis 1 was tested by the fixed hypotheses 1, 2 and 3 of AQUAD (the program emphasised the co-ocurrence of codes in distance text lines, supporting the potential relationships of codes and locating the instances in which code associations occurred in the data), while research hypothesis 2 was tested by the component "minimalization" of AQUAD (i.e. the computer program searchers for metacodes in Boolean combinations).

Results

Findings and Discussion. The findings from this study have been summarized in the form of three major dimensions, each supported by some propositions. A case study structure has been selected for the instructional dimension which is followed by documentation in the form of excerpts from individual protocols which instantiate the findings. Each of the propositions is phrased as if it were a conclusion.

(a) Organization structure: the school as the institutional framework of change. The social organization of the school was reviewed around three conceptual dimensions:

(a´) *highly coupled school culture: a need of managerial rules and coordination as a way of professional organization*. The study focused upon some elements and components that constituted a social school organization. The school culture in its ecological context was composed of three macrofactors that mediated the organization goals (official goals were formal statements concerning mission of the school and were published in two documents called Interior Regime School Rules) and the educational framework (curriculum intentions and operative goals were published in a document known as the Education Project and the School Curriculum Project): (i) a religious private and urban school. That Catholic education environment was visible in external school factors (i.e. parental involment, student background), and in behavioural patterns of staff

members (i.e. moral indoctrination, community consensus for teaching values); (ii) concerning gender, the school had a female culture (i.e. students were girls and female teachers were the majority of the staff members (except two). Some teachers had been educated in that school, assumed as known the social relations and work commitments, and they obviously reproduced them, and (iii) the school covered all educational levels except the university stage. In the 1990-91 year course the number of students was 1.893. It was not difficult to envision a fragmented social structure provoking educational networks within the predominant culture of the school based upon educational levels (Preschool -4 to 6 year-old children-, Primary -6 to 14 year-old children- and High School -14 to 18 year-old children) or within them (First Stage -6 to 8 year-old children, and Upper or Superior Cycle -11 to 14 year-old children- within the Primary Education level);

(b´) *teaching alone, learning together: team cooperation as an expression of teaching participation and commitment*. Cooperation among teachers was an organizational principle easily observed. The school responded to the Organizational Development model because cooperation and work participation were deeply valued. Teachers worked in departmentalised and specialization units using the following tactics to foster collaborative reflection: (i) diagnostic and reflection teams using as a grouping criterion of the new educational system organization (Preschool, Primary Education -6 to 11 year-old children-, Secondary Education -12 to 16 year-old children- and Baccalaureate -16 to 18 year-old youngsters-); (ii) the activities realized in a monthly curriculum workshop; (iii) a communicative observation reinforcing reflection on practice; (iv) interviews based upon observations events and peer and horizontal interactions. Face-to-face collegial relations themes were related to all knowledge casualties detected on vignettes; (v) faculty cooperation in academic data analysis (i.e. teachers were committed on self-analysis processes: a triangulation of reflective critical dialogues, observations and interviews), and (vi) synthesis of results related to collegiality. Teachers had a tradition in personal work conections (i.e. teaching cycle teams and department seminars). Besides, a new school organization structure emerged called collaborative inquiry teaming. Teacher reflections were situated in two main groups: (i´) collaborative work in organization unit reflections (i.e. planning and evaluation of teaching in working teaching teams and department seminars), and (ii´) collaborative research reflections at the beginning and end of the study (i.e. teachers had high expectations respecting this kind of social support from colleagues). Teachers perceived the need to widen and deepen the pedagogical knowledge and feedback on their curriculum activities and social actions. Indeed, they assumed epistemological difficulties in the realization of the complex reflectivity cycle, and considered the diffusion of their research role because they were not trained for it. Nevertheless, they accepted the research aims and had ambiguous attitudes (acceptance and rejection) concerning this kind of studies;

(c´) *leadership collegiality: individual characteristics of the pedagogical principal for the development of the learning community*. School principalship was a shared duty between two people: a pedagogical leader and a management head. In this study educational changes were promoted by the pedagogical leader. He was in charge of fostering instructional innovations, organizing school learning activities, implementing staff development programs and coordinating changes in all school educational levels. He acknowledged that a pedagogical leader needed to have a variety of school administration knowledge (i.e. shaping school life according to educational policies and innovations; attending psychological characteristics of teachers belonging to various age and experience cycles; promoting group dynamics). For him, a leader must be a person in authority which he defined as having a "real, manifested, reckoned and accepted superiority". An essential role a leader must carry out is getting shared owenership among teachers and coordinating them within the institution. The management head was a mature nun worried with allocating resources, enforcing school rules, supervising teachers and facilitating communication of policy decisions within school and its external constituencies.

(b) Instructional dimension: case studies of the visions, voices and epistemological versions of the work design and life in the classrooms. Teachers categorized their own practical curriculum materials, while researchers introduced the frecuency of teachers´ used codes to a matrix. Once data were processed, teachers used their matrix and protocol materials to declare teaching principles or statements about their practical action and also their representation in observable

BEST COPY AVAILABLE

cognitive maps. Later, each coordinator of the research subgroups fitted teaching principles to workable computer hypotheses, that could be tested in the AQUAD program. The comprehensive structure and processes of each of the 29 teaching dossiers were as follows: (i) a matrix construction of code frequencies, (ii) a writing of explanation principles of practice, (iii) a drawing representing a cognitive map, (iv) a hypothesis formulation, (v) a hypothesis interpretation, (vi) a dialogue between teachers, and (vii) a practice improvement proposal and a coordinator comment (Sykes and Bird, 1992). As an example, it has been selected excerpts from different vignette phases of a Preschool teacher: (i´) the matrix contained the frequency of codes, list of research materials and total code frequency;

(Insert Table 2 here)

(ii´) a cognitive map representing the relationship of teaching principles mentioned below;

(Insert Figure 1 here)

(iii´) hypotheses tested the relationship and association among categories. They were stated by each group researcher coordinator based on the teaching principles ("At the beginning of the classroom period there exists a relationship between the teacher and students"), the category hierarchy ("Classroom work was composed of individual and colective tasks and both needed of curriculum materials and human resources for their achievement") or the cognitive map ("Cooperation between the teacher and students influences classroom organization"). For that individual Preschool teacher 15 hypotheses were tested; (iv´) hypothesis interpretation; (v´) a dialogue between two teachers. Two Preschool school teachers carefully dialogue face to face about evidence-based teaching principles and a cognitive map in the following excerpt:

Teacher 1: How have you perceived your teaching after ordering the teaching principles?
Teacher 2: I will explain my cognitive map. I have situated general objectives of my planning in the first stance. For this particular organization it is necessary the inclusion of materials and human resources. Once I have settled down that, I paid attention to things I did with girls. In other words, how I worked with interest centers, which took place along time. Afterwards, I enhanced motivation and group dynamics. As you know, I have been working with four-year-old girls for the last four years. I have been trying to do observational, manipulative and experimental individual or colective activities. This has provoked the discovery of things we have been working on. I passed out activities to work on. However, they did exercises so that pupils could manipulate objects or knew and observed the object. It could be observed how the classroom tasks were going on and this made me reflect on the course organization and planning. At that moment I reflected on what the educational reform was about and the research objectives for teachers.

(vii) a practice improvement proposal. An example of that could be seen in relation with the hypothesis of "sequencing and classroom order". She critically expressed herself as in the following excerpt:

> In a sense, I view as very important that sequencing and order activities be implemented because they (girls) did not have time perception and also needed activity orderly arranged so as to place themselves on time. But this principle made me reflect: which is the importance I should attach to those concepts? Could I not be making the mistake of implementing a boring and routine teaching? In a way, I will pay more attention to this hypothesis and improve it in the future. Besides, I have to improve the "relationship principle" hypothesis because its frequency has been low and I think it is one of the most important at the Preschool level.

and (viii) research coordinator comments. The explanation principles derived by this teacher came from an understanding of the teaching/learning process in three phases: planning, implementation and evaluation. Coordinator´s knowledge claims illuminated teachers´ value judgements.

(c) the curricular dimension: matrices of practical reasoning and the personal, intuitive and improvised knowledge of teachers. Generalization across single cases was accounted by means of coherent matrix interpretations. Five matrices were proposed to understand the collected performances and curriculum practices around the following topics:

(a´) *Concept matrix*. Consisting in the proposal of congruent concepts with teacher practice data empirically derived by the research team (Miles and Huberman, 1984: 110). Six curriculum concepts were inferred from data: student participation, student distribution, evaluation, curriculum implementation, methods and teacher education. (Concepts were named after teachers´ own words).

(b´) *Skill matrix*. Summarizing teaching skills derived by researchers and classifying them according to educational levels (Miles and Huberman, 1984: 104). Therefore six matrices were generated, one for each educational level: Preschool teachers, Initial Cycle of Primary Education, Upper Cycle of Primary Education, Baccalaureate-1 (Science) and Baccalaureate-2 (Arts). At least 25 skills were identified for all teachers. Skills were technical competencies related with the teaching/learning process (Woods, 1990) and were classified according to the following framework: planning (i.e. peer affiliation and collaboration, reflection, planning, in-service training dispositions and research), interaction-instruction (for instance, task control, dual activities (i.e. transitions from seatwork to small groups), adequate activities, problem-solving, using different methods, fostering student intelectual enrichment, objective achievement), interaction-management (i.e. relationship and assessing, classroom organization, stablishing classroom rules, movement cues, increasing student participation, classroom dynamics, creating classroom climate), interaction-attitudes (i.e. increasing student autonomy and responsability, student motivation and perseverance, stimulating student value acquisition), and evaluation (i.e. knowing students, assessing, fostering student self-evaluation, reflecting, and research competencies).

(c´) *Frequency of crossed case analysis matrix*. Representing repeated codes classified according to a scale (Miles and Huberman, 1984: 151). Value distributions into the nominal scale were: small frequency (1-6 cases), law frequency (7-12 cases), regular frequency (13-18 cases), high frequency (18-26 cases) and very high frequency (27-60 cases).

(d´) *Professional concerns and critical thinking in a life span cycle matrix*. Summarizing teachers´ problems, concerns and reflectivity based on life span cycles. Four columns of the matrix contained professional aspects: concerns, problems, dilemmas and working consideration; training needs and professional development; school professional relationships, and reflectivity. Four life cycles grouped all 26 teachers.

(e´) *"Minimalization" matrix*. Allowing testing the principal hypothesis 2 using AQUAD program (Tesch, 1990). Metacodes (i.e. central curriculum/instruction phenomenon around which other categories are integrated) were based on characteristics of the computer program (Huber, 1991: 117). The selected metacodes encapsulated the substance of the study and were of two types: (i) **quantitative** indicators obtained by the aggregation of frequencies of codes used by teachers: metacognitive skills (*DEM*) (Lyons, 1990; Prawat, 1991; Kagan, 1990; Doyle, 1990); components for the description of a theory of curriculum action (*TEO*) (i.e. aims, values, dilemmas and uncertainties) (Marland and Osborne, 1990); beliefs about the management of events, situations and classroom tasks (*CREE*) (i.e. establishing, mantaining and concerning with classroom order) (Pajares, 1992; Woolfolf, Rossoff and Hoy, 1990); and (ii) **qualitative** indicators obtained by researchers´ reflective statements. They were composed of professional culture: teacher proclivity vs. resistance to change (*CUP*) (Feiman-Nemser and Floden, 1986; Fullan, 1991; Lieberman, 1988); teaching femininity: autonomy vs. collaboration (*ACO*) (Fullan, 1991), and teaching femininity: teachers as knowledge constructors vs. takers (*CORE*) (Lyons, 1990).

Implications. At least two suggested recommendations can be offered from this study: (a) an in-service training on teachers' critical thinking approaches to curriculum and school improvement, and (b) research on leaders as managers of curriculum and school culture change.

Conclusion

Three main conclusions may be drawn from the experience around the school organization, classroom instruction and school curriculum. Of course, more dimensiones and consequences have

emerged along this study (i.e. University-school cooperation, teaching feminism, pupils learning, parent participation in school activities, inservice training, and so on). However, we have determined three kinds of evidence to legitimize the intended and unintended inquiry consequences.

(a) General conclusions about the organizational dimension. The school reflected a stable culture, because there existed a high degree of aceptance of basic rules and values. Teachers followed the school dynamics (its rules), played a division of teaching roles and functions, attended time schedules proposed by the leader, and there was an equilibrium between principal support and mandates. To a certain degree teacher autonomy and initiatives depended on the school organization. Teacher demands were assumed by the leader and the nun if they corresponded with school general policies and did not disrupt the dominant school culture. Three main structural factors (Catholic private school, feminine school culture and an encompassing educational level school) conditioned patterns, rules, expectations intrinsically related giving to a sense of school community (shared values). There existed specific subcultures (that is, kinds of "family spirits") referred to the occupational community, with intersected circles. More than a "balcanization" school culture there was a joint school plan.

Respecting *collaborative work* conclusions were the following: (a´) collaborative work had been in practice in all school educational levels; (b) school departmentalization met all curriculum functions except one: "stablishing a self-evaluation criteria for teaching"; cycle teacher teams met all domains and performances except one related with "coordination in the use of teaching resources"; (d) coordination was better perceived in Preschool school level than in other educational levels; (e) other educational levels got involved in teaching teams but they felt the need of teaching improvement; (f) teaching departments needed to work in an interdisciplinary basis; (g) in order to work in teaching and formative team activities, practitioners needed to have spare time, and (h) teachers were very conscious about the importance of the teamwork strategy.

Conclusions about the *leadership* showed the following characteristics: (a) the pedagogical leader perceived himself as a charismatic leader; (b) he declared the need for some kind of a leadership in-service training, which should be based upon experience, and therefore it should go from practice to theory; (c) he understood teaching and principalship as mixture of science, art, skillness and "craftmanship"; (d) he saw the principal as an assertive person who should have common sense and imagination, should learn from experience facts and values, should behave as a moral authority and show an openminded attitude; someone who learned to reflect on their actions, essentially as a school planner and a teachers coordinator; a knower of his/her surroundings and able to comprehend school possibilities; (e) he understood that leading an educational institution should be something more than beeing a technical expert principal implementing and controlling organization goals but one transforming school by conviction; (f) he established communication links with school teachers (i.e. listening, altering school agenda to include spare time for doing research, creating teams, reinforcing novice teachers); (h) he trusted intermediate educational level leaders (i.e. heads of teaching departments, educational cycle coordinators); (h) he suggested a leader should posess a recognized authority by his or her colleagues to shape school for future educational innovations, and (j) he recommended in-service leader training workshops consisting essentially in ways of protecting teacher values, mobilizing specific action plans to solve teacher needs, and using department teams for the socialization of beginner teachers and promoting instructional supervision activities.

(b) General conclusions of the classroom instructional dimension. (There have been selected some meaningful comments from a case study: a Preschool teacher). Three out of the 15 tested hypotheses were confirmed, while the rest were refuted. A verified statement was related to instructional sequencing and events order in the classroom (codes MOG-EXP-ACT) (see Annex below). In general, she initiated her classroom discourse motivating all students. Afterwards she clarified content concepts, and girls were committed to the realization of workbook activities. This hypothesis was supported by a sufficient number of vignettes (i.e. classroom observations two and six). Another verified empirical hypothesis was consistent and related with the teacher´s curriculum principle of pupil´s responsability or autonomy (codes RSP-MEM). Finally, a third hypothesized statement beeing supported was the realization or productivity curriculum principle (codes RVT-COM). This case suggested that the Preschool teacher was in the process of changing

contextualized instructional practices.

(c) General conclusions of the curricular dimension. Curriculum has been understood in this study as a phenomenological text built from the "ground up". There has not been a distinction between experience and language, or experience and conceptualization. Curriculum happenings have been interpreted theoretically in order to understand teaching concepts, categories, strategies and skills, reflective thoughts and concerns, and personal theories.

(a´) *Conceptual matrix*. Students engaged at a class level usually participating in learning activities; students were assembled in fixed groupings (i.e. small groups and cooperative learning teams); individual, continuous and diagnostic assessments were played reflecting a concern for fairness to students´ learning abilities and to give reflective feedback to teachers; order was achieved in classrooms establishing activities, rules and procedures (i.e. class sessions appeared to be ritualized and routinized with specific openings, closings and the interactive conduct of lessons); explanation and giving examples were basic rehearsal strategies to convey profound and meaningful information (i.e. it involved the girls actively saying, writing in order to produce workbook tasks); there were cognitive principles of curriculum design as well as other individual constructs such as the girls goals, purposes, expectations, or needs, and in-service teacher training was based upon self-reflection-on-action.

(b´) *Frequency matrix*. Category MOT (motivation) was repeated in all educational cycles. There were two categories included in four of the five educational levels: code EVA (evaluation) was provided in Preschool, Middle and Upper cycles of Primary Education and Baccalaureate. Category PAR (participation) was consistently represented in Primary Education and Baccalaureate. There was a clear and general use of curriculum development functions in the Upper Cycle of Primary Education and Baccalaureate: content selection, difficulties, teacher participation, planning, motivation, evaluation, individualization, and methods. There were uniform series of very frequent categories in various domains of classroom management, learning strategies and teaching functions (i.e. reiterated teacher comments, asking questions, correcting errors, student monitoring, conceptual cues, attitude, teacher methods, collaboration, classroom climate, active method, classroom organization, student participation, and classroom order). Teachers were most interested in the following topics: student motivation, evaluation, student participation during seatwork, setting objectives and implementing methods. Most fundamental topics in the Initial Cycle were motivation (i.e. epistemic motivation) and correction (i.e. checking for understanding). Preschool teachers enhanced motivation (i.e. girl self-perception), evaluation (i.e. correcting answers by using prompts), organization (i.e. ordering short blocks of classroom time), rehearsal strategies and objectives. In the Upper Cycle it was important the following categories: motivation, evaluation, objectives, student participation (i.e. classroom discourse viewed as a game of structuring, soliciting and responding), knowledge classification, content difficulties, curriculum planning, and individualization. Finally, three themes were underlined in Baccalaureate: motivation (i.e. interest and value beliefs), evaluation and teaching methods (i.e. participation structures such as cooperative teams, monitoring, negociating academic work).

(c´) *Skill matrix*. Respecting Preschool education teachers had 13 out of the 25 skills; instructional skills authentically represented, beeing student autonomy and responsibility the most important one; teachers possessed those skills related with instructional evaluation (knowing, evaluating and student self-evaluation). Respecting to the Initial Cycle, four teachers had 80 per cent of the skills, except classroom organization, dual activities, classroom climate, how to move around in the classroom, and student self-evaluation; the skills communicating and helping, and classroom rules were the most important ones. Middle Cycle teachers showed 10 out of 25 skills; most frequently performed skills were classroom management (i.e. student participation, classroom rules, how to move around and classroom climate); student participation was enhanced by means of working materials and student decision making. Science Baccalaureate teachers consistently documented 17 out of the total number of skills during the interactive teaching/learning process; teachers approached instructional skills followed by classroom management functions and those positive attitudes towards student oriented skills. The most frequently chose discrete skill was student

motivation. Arts Baccalaureate teachers kept 72 per cent of the total number of skills. They were distinguished by a prominent and effective skill called student motivation; instructional skills were the most frequent and distinctive ones; student intellectual enrichment and self-evaluation skills appeared in five cases. Finally, student paticipation and classsroom climate occurred four times in seven teachers.

(d´) *Professional concerns matrix and critical judgment according to life span cycles*. Professional teacher attitudes, behaviors, self-regulation, and concerns varied depending on their age. Teachers had a greater school commitment at the beginning of their professional career than at their maturity stage (35 and 40 year-old teachers, and 10 or 15 years of teaching experience). Teacher commitment diminished due to the increasing of family interests and circunstances, like playing the role of housewife and mother. Teachers´ self-monitoring, reasoning and thinking skills increased congruently with teachers´ age (i.e. teachers´ metacognitive abilities to control a wide variety of personal and environment conditions).

(e´) *"Minimalization" matrix*. There were 16 teaching theory combinations. The *ABCDEF* combination theory (teachers had metacognitive skills; they were able to describe their own theory of curricular action -aims, values, dilemmas and uncertainties, etc.-; they kept personal beliefs on classroom management; they were in favour of instructional changes; they collaborated with colleagues, and were knowledge constructors) and the *AbcDEF* combination theory (teachers had metacognitive skills; they were in favour of instructional changes, and collaborated with colleagues; however, they did not articulate components of a curricular action or classroom organization theory) grouped four and three teachers, respectively. When the metacode *DEM* (metacognitive skills) was used as a criterion value, other letter (or varible) groupings were formed, beeing present *E* (metacode *ACO*) in all of them which was associated with *A* (metacode *DEM*). It was concluded that metacognitive skills were associated with colleague collaboration.

Conclusion summary. Two main hypotheses were verified against data: (a) teachers' pedagogical practical knowledge, individually considered, showed some evidence of the diversity and multiplicity of their implicit theories to design instructional action, and (b) teachers' "grounded theories" also denoted and supported the idea that their reflective teaching was related with a cooperative school culture.

References

Alexander, P. A., Schallert, D. L. and Hare, V. C. (1991). Coming to Terms: How Researchers in Learning and Literacy Talk About Knowledge. *Review of Educational Research, 61* (3), 315-343.

Clandinin, D. J. and Connelly, F. M. (1992). Teacher as Curriculum Maker. In Jackson, P. W. (Ed.). *Handbook of Research on Curriculum*. New York: Macmillan Publishing Company, 363-401.

Copeland, W. D. *et al.* (1993). The reflective practitioner in teaching: toward a research agenda. *Teaching and Teacher Education, 9* (4), 347-359.

Day, Ch. (1990). The Development of Teachers' Personal Practical Knowledge through School-based Curriculum Development Projects. In Day, Ch., Pope, M. and Denicolo, P. *Insights into Teachers' Thinking and Practice*. Lewes: The Falmer Press, 213-239.

Dewey, J. (1933). *How we think*. Boston: Heath.

Doyle, W. (1990). Themes in Teacher Education. In Houston, W. R. (Ed.). *Handbook of Research on Teacher Education*. New York: MacMillan Publishing Company, 3-24.

Elliott, J. (1991). *Action research for educational change*. Buckingham: Open University Press.

Feiman-Nemser, S. and Floden, R. (1986). The cultures of teaching. In Wittrock, M. (Ed.). *Handbook of Research on Teaching, Third Edition*. New York: Mamillan, 505-526.

Fullan, M. G. (1991). *The new meaning of educational change*. London: Cassell.

Guba, E. G. and Lincoln, Y. S. (1987). Naturalistic Inquiry. In Dunkin, M. J. (Ed.). *The International Encyclopedia of Teaching and Teacher Education*. Oxford: Pergamon Press, 147-151.

Huber, G. (1991). *AQUAD. Análisis de datos cualitativos con ordenadores; principios y manual de programas AQUAD 3.0*. Sevilla.

Joyce, B. R. and Showers, B. (1982). The coaching of teaching. *Educational Leadership, 40* (1), 4-9.

Joyce, B. R. (Ed.) (1990). *Changing School Culture Through Staff Development. 1990 ASCD Yearbook*. Alexandria: Association for Supervision and Curriculum Development.

Kagan, D. M. (1990). Ways of Evaluating Teacher Cognition: Inferences Concerning the Goldilocks Principle. *Review of Educational Research, 60* (3), 419-469.

Korthagen, F. A. J. (1993). Two modes of reflection. *Teaching and Teacher Education, 9* (3), 317-326.

Lee, V. E., Bryk, A. S. and Smith, J. B. (1993). The Organization of Effective Secondary Schools. *Review of Research in Education, 19*. Washington: A.E.R.A., 171-267.

Lieberman, A. (Ed.) (1988). *Building a Professional Culture in Schools*. New York: Teachers College Press.

Lieberman, A., Darling-Hammond, L. and Zuckerman, D. (1991). *Early Lessons in Restructuring Schools*. New York: NCREST, Teachers College, Columbia University.

Lyons, N. (1990). Dilemmas of Knowing: Ethical and Epistemological Dimensions of Teachers'

Work and Development. *Harvard Educational Review, 60* (2), 159-180.

Marland, P. and Osborne, B. (1990). Classroom Theory, Thinking, and Action. *Teaching and Teacher Education, 6* (1), 93-109.

Miles, M. B. and Huberman, A. M. (1984). *Qualitative data analysis: A sourcebook of new methods*. Beverly Hills: Sage.

Pajares, M. F. (1992). Teachers´ Beliefs and Educational Research: Cleaning Up a Messy Construct. *Review of Educational Research, 62* (3), 307-332.

Prawat, R. S. (1991). Conversations With Self and Settings: A Framework for Thinking About Teacher Empowerment. *American Educational Research Journal, 28* (4), 737-757.

Ross, D. D. (1989). First Steps in Developing A Reflective Approach. *Journal of Teacher Education, XXXX* (2), 22-30.

Rossman, G. B., Corbett, H. D. y Firestone, W. A. (1988). *Change and Effectiveness in Schools*. Albany: State University of New York Press.

Rowan, B. (1990). Commitment and Control: Alternative Strategies for the Organizational Design of Schools. In Cazden, C. (Ed.). *Review of Research in Education, 16*. Washington: AERA, 353-389.

Schön, D. A. (1987). *Educating the reflective practitioner. Toward a new design for teaching and learning in the professions*. San Francisco: Jossey-Bass Publishers.

Smyth, W. J. (1989). Developing and Sustaining Critical Reflection in Teacher Education. *Journal of Teacher Education, XXXX* (2), 2-9.

Strauss, A. and Corbin, J. (1990). *Basics of Qualitative Research. Grounded Theory Procedures and Techniques*. London: Sage Publications.

Sykes, G. and Bird, T. (1992). Teacher Education and the Case Idea. *Review of Research in Education, 18*. Washington: American Educational Research Association, 457-521.

Tesch, R. (1990). *Qualitative research: Analysis types and software tools*. Lewes: The Falmer Press.

Villar, L. M. (Dir.) (1992). *El profesor como práctico reflexivo en una cultura de colaboración*. Sevilla: GID y FORCE.

Woods, P. (1990). *Teacher Skills and Strategies*. London: The Falmer Press.

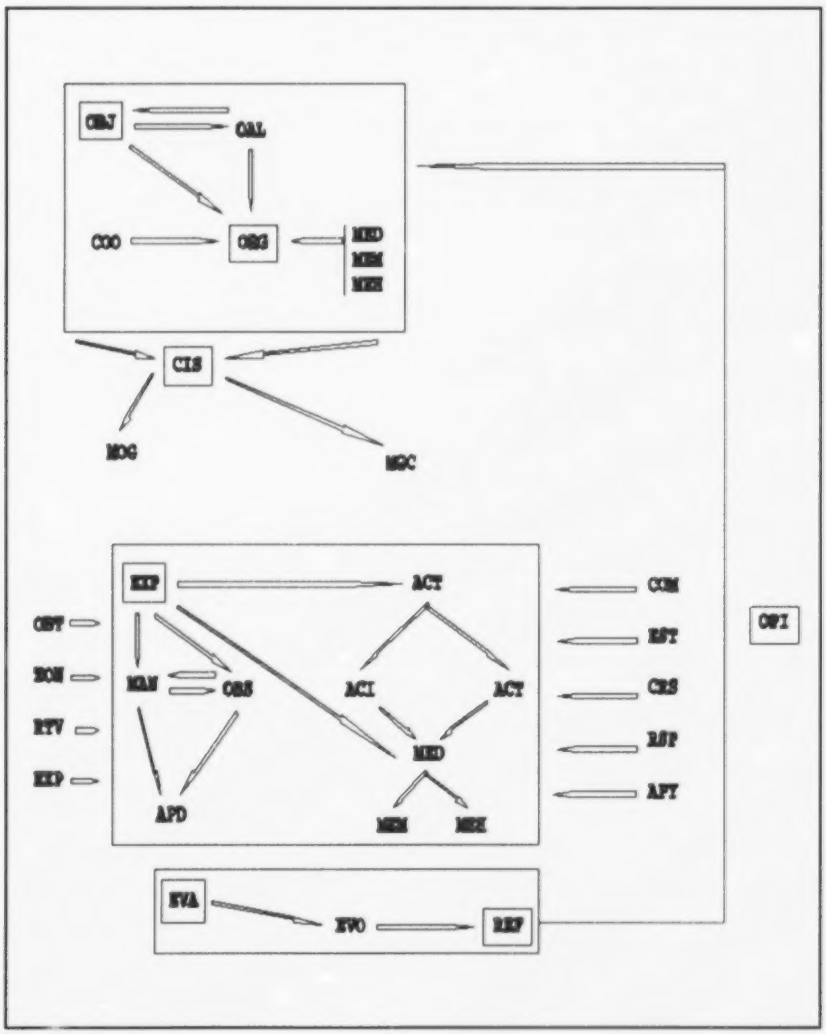
Woolfolk, A. E., Rosoff, B. and Hoy, W. K. (1990). Teachers' sense of efficacy and their beliefs about managing students. *Teaching and Teacher Education, 6* (2), 137-148.

Zeichner, K. M. and Tabachnick, B. R. (1991). Reflections on Reflective Teaching. In Tabachnick, B. R. and Zeichner, K. M. (eds.). *Issues and Practices in Inquiry-Oriented Teacher Education*. Lewes: The Falmer Press, 1-21.

Table 2. Frequency matrix of code ocurrence (Preschool teacher)

CODES	REFLECTIONS	DIALOGUES	OBSERVATIONS	INTERVIEWS	TOTAL
APY				1	1
APX		2	7	1	10
API				1	1
COO		2	1	1	4
APD				1	1
ZON			4	1	5
EST		2	15	8	25
EXR	6			4	10
EXP		4	6	1	11
EVA		8		3	11
MAN				1	1
MOT		1			1
MOG		1	3		4
MGC				3	3
OBJ		2			2
OPR	3				3
OPI	3	9			12
OAL		1		3	4
OBS		2	42		44
OBT	1	6	2		9
RVT		1	14		15
ORG	2	7		2	11
MEM	1	7	3	1	12
MEH		2			2
REF	1	2		3	6
COM			7	1	8
RSP		2		1	3
CRS		28	17	10	57
ACT			19	6	25
ACI			6	1	7

Figure 1. Cognitive map: Preschool Teacher Planning.



ANNEX. Codes and categories generated by a Preschool teacher which have been used in the matrix and in the cognitive map.

APY	SUPPORT. Establishing not only an intern support relationship (school-classroom) but also an external one (parents, institutions, researchers...).
APX	SUPPORT. External.
API	SUPPORT. Internal.
CIS	INTEREST CENTER. Starting point for developing a topic in the classroom.
COO	COOPERATION. Attitude that allows teams of teachers work together.
APD	DISCOVERY. Teaching strategy according to that students learn through experimentation.
ZON	SPACE. Classroom corners that delineate different teaching areas.
EST	STRATEGY. Means through which a teacher tries to achieve an objetive or goal. The mean or strategy depends on the teacher.
EXR	EXPERIMENTATION. Process through which an innovative activity is implemented and results are evaluated.
EXP	EXPLICATION. Didactic strategy consisting in giving information to students in order to achieve an objetive.
EVA	EVALUATION. Diagnostic study that is realized in order to check the student educational achievement level or the one that he or she already has.
EVO	CONTINUOUS EVALUATION.
MAN	MANIPULATION. Educational technique that allows students get directly in touch with objects.
MED	RESOURCES. Classroom media that allows teaching work.
MOT	MOTIVATION. Strategy used by the teacher to allow students master contents and concepts in an agreeable and pleasant form in order to achieve some predermined objetives.
MOG	MOTIVATION IN LARGE GROUPS. Series of classroom motives for all kinds of school age children.
MGC	MOTIVATION IN A CLASSROOM GROUP. Series of classroom motives for a classroom group age children.
OBJ	OBJETIVE. Goal to be achieved either by a teacher or a student in the educational process.
OPR	OBJETIVE : TRAINING. Study and in-service teacher training.
OPI	OBJETIVE : RESEARCH. Working strategy used to answer important questions set by the teacher.
OAL	OBJETIVE : STUDENT.
OBS	OBSERVATION. Technique whereby a passive agent accumulates data about an active agent.
OBT	OBSTACLES. Circunstances that make teaching practice difficult.
RVT	WORKING ORDER. Repeating a sequence when an activity is carried out.
ORG	ORGANIZATION. Planning for implementing a teaching task.
MEM	RESOURCES : MATERIALS.
MEH	RESOURCES : HUMANKIND.
REF	REFLEXIVITY. Process through which a teacher gives judgments about her dayly activity within a teaching/learning process.
COM	RELATIONSHIP. Situation in which two or more people interact.
RSP	RESPONSABILITIES. Work assigments adequately meant for each age group.
CRS	REPEATED COMMENTS. Improvised comments due to specific experienced events. Explanation about some circunstances related with students or classrooms.
ACT	WORK. Student activities (i.e. reading, listening music, watching videos).
ACI	SEATWORK. Students work on their own.